

1     **CLAIMS**

- 2     1.     A process for making composite parts comprising:  
3             separately de-bulking first and second covers made of multi-layers of  
4     sheets filamentary material sheets pre-impregnated with a resin having a first  
5     curing temperature;  
6             forming a preform sandwich assembly by:  
7                 placing the first cover on a mold surface;  
8                 placing a first layer of adhesive on the first cover, said first layer  
9             of adhesive, said first layer of adhesive having a second curing  
10            temperature less than the first curing temperature;  
11            positioning a honeycomb core material over said first layer of  
12            adhesive;  
13            placing a second layer of adhesive on the honeycomb core; and  
14            placing the second cover on top of the second layer of adhesive  
15            core, said second layer of adhesive having a second curing  
16            temperature less than the first curing temperature;  
17            vacuum bagging the assembly;  
18            drawing a vacuum from within said vacuum bag;  
19            initially heating the assembly at a heating rate of between 0.5 degree  
20     and 2 degrees per minute until the gel temperature of said adhesive is  
21     reached;  
22            holding the temperature at the gel temperature until the layer of  
23     adhesive has cured;  
24            raising the temperature to the first curing temperature of the resin; and  
25            maintaining the temperature at the first curing temperature until the  
26     resin has cured.

1     2.     The process of claim 1 where in the step of drawing a vacuum from  
2     within said vacuum bag the vacuum is a minimum of 25 inches of Hg.

3     3.     The process as set forth in claim 2 wherein the resin in the first curing  
4     temperature is 350 °F.

5     4.     The process as set forth in claim 3 wherein in said step of the initially  
6     heating the assembly at a heating rate of between 0.5 degree and 2 degrees  
7     per minute until the gel temperature of said adhesive is reached, the rate of  
8     heating is 1 degree per minute.

9     5.     The process as set forth in claim 4 wherein prior to the step vacuum  
10    bagging the assembly, the steps:  
11         forming a resin containment dam about the preform;  
12         providing a path through dam such that a vacuum can be drawn from  
13    within the containment dam.

14    6.     The process as set forth in claim 5 wherein the distance from the dam  
15    to the preform is a maximum of 0.06 inch.